

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



Reserve

1

F76Y

LIBRARY

RECEIVED

JUN 1 1952

U. S. DEPT. OF AGRICULTURE

# YOU need trees!



6 LESSONS  
IN TREE PLANTING

The Country Women's Council, U.S.A.  
in cooperation with

U. S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE

UNITED STATES  
DEPARTMENT OF AGRICULTURE  
LIBRARY



Reserve  
BOOK NUMBER 1  
F76Y

You need trees!

prepared for The Country Women's Council, U.S.A.

## FOR TOMORROW'S SAKE, PLANT TREES TODAY!

You can earn cash today and return profits in the future if you invest some time and care in the management of your small farm forest or woodlot.

Do you know what a forest really is?

The forest is a changing, living community, subject always to the forces of nature — to earth, air, sunshine and rain — and, within itself, to the action of plants and animals.

Animals and plants are interdependent; man is dependent upon both animals and plants; all are dependent upon soil.

When man ignorantly or carelessly destroys much of the plant cover, perils arise...often resulting in dust bowls, spreading deserts, ruined valleys, silted reservoirs, recurring water shortages, polluted rivers, and ravaging floods.

Remember, deserts in various parts of the world were once fertile places. Remember, the 1934 Dust Storm blew away enough topsoil to put a 7-inch layer on 1,800,000 farms of 160 acres each. Remember, whole areas of our country have declined.

Think about people forced to move on to other places or to remain and live in poverty and ignorance, ridden by disease.

Think about your farm. With the right to own goes the duty to conserve. Wise use is conservation. It is possible to rebuild soil and to replant forest land. You can help nature keep in balance.

Trees are extremely important in keeping nature's balance. They hold soil in place. Their roots conduct underground waters to stems and leaves and to ground-water storage levels. Their branches shelter birds that eat insects which might otherwise destroy farm crops. Their falling leaves form humus, enriching the soil. Leaves, covering the ground help prevent the rain from beating against the ground so hard that the soil is washed away. By retarding the raindrops, the leaves help water soak into the ground where it is needed. Standing trees help break the force of the wind and keep soil from blowing away.

Think about the trees on your farm. Small forest owners are profiting from well-managed forests and efficient sales methods. There never was a better time to make a small forest pay. Wood products bring good prices. Really good lumber from large, straight, clear logs will always command a market.

Congress has set aside money to help the States provide the owners of small forests with fire protection, seedlings for planting and advice on forest management.

Use wisely and build UP!

Begin now, trees take time to grow.

#### Questions for Discussion

1. Are there any examples of "problem" land in our community or in the experience of any members of our group? Eroded areas? Gullied fields? Floods? Cut river banks? Dropping water tables? Pollution?
2. Where do trees fit in the balance of nature? Is it practical to help nature keep in balance by rebuilding soil and planting trees where they are best suited to grow? Can land management or mismanagement on one farm affect adjoining farms?
3. What kinds of woodlands exist on farms in our community? Is the timber in them growing, standing still, or losing ground? Why?

Reference Material  
(For this and succeeding lessons)

You can probably obtain bulletins on tree planting and farm woodland management from your State Conservation Department, your county agent, and the nearest farm forester. In addition, the following may be obtained, free of charge, from the Forest Service, U. S. Department of Agriculture:

Managing the Small Forest, Farmers' Bulletin No. 1989  
Wood, the Material of a Thousand Uses, K-27  
The Well-Kept Farm Woods, a Teaching Outline, O-31  
What We Get from Trees (Chart of Products), M-5293

To get these materials, write to the Forest Service at the regional office serving your state. These regional offices are listed below.

| <u>Region</u> | <u>States</u>   | <u>Headquarters Address</u>   |
|---------------|---|---|
| 1             | Northern Idaho<br>Montana                                 | U. S. Forest Service<br>Federal Building<br>Missoula, Montana           |
| 2             | Colorado<br>Kansas<br>Nebraska<br>South Dakota<br>Wyoming | U. S. Forest Service<br>Post Office Building<br>Denver, Colorado        |
| 3             | Arizona<br>New Mexico                                     | U. S. Forest Service<br>Post Office Building<br>Albuquerque, New Mexico |
| 4             | Southern Idaho<br>Nevada<br>Utah                          | U. S. Forest Service<br>Forest Service Building<br>Ogden, Utah          |
| 5             | California  | U. S. Forest Service<br>630 Sansome Street<br>San Francisco, California |
| 6             | Oregon<br>Washington                                      | U. S. Forest Service<br>Post Office Building<br>Portland, Oregon        |

| <u>Region</u> | <u>States</u>  | <u>Headquarters Address</u>  |
|---------------|--|--|
| 7             | Connecticut<br>Delaware<br>Kentucky<br>Maine<br>Maryland<br>Massachusetts<br>New Hampshire<br>New Jersey<br>New York<br>Pennsylvania<br>Rhode Island<br>Vermont<br>Virginia<br>West Virginia | U. S. Forest Service<br>Bankers' Securities Building<br>Philadelphia 7, Pennsylvania |
| 8             | Alabama<br>Arkansas<br>Florida<br>Georgia<br>Louisiana<br>Mississippi<br>North Carolina<br>Oklahoma<br>South Carolina<br>Tennessee<br>Texas  | U. S. Forest Service<br>50 Seventh Street, N.E.<br>Atlanta 5, Georgia                |
| 9             | Illinois<br>Indiana<br>Iowa<br>Michigan<br>Minnesota<br>Missouri<br>North Dakota<br>Ohio<br>Wisconsin  | U. S. Forest Service<br>623 N. Second Street<br>Milwaukee 3, Wisconsin               |
| 10            | Alaska   | U. S. Forest Service<br>Juneau, Alaska   |

## TREES CAN MAKE IDLE LANDS COME TO LIFE

On your own farm, and in your own neighborhood, a tree planting program is one of the most practical and profitable projects that you can undertake.

Trees add to farm income. The first person to benefit from a well managed farm forest is its owner. The timber it yields will help him and give work to many people. First of all it will put cash in the owner's pocket, or at least save him from having to buy fuel and lumber. It will save his land from erosion and will conserve the water he uses. It will bring him profits from land which might otherwise be almost worthless.

Should you plant more tree crops on your farm? Trees of a useful variety, successfully started on the right land are sure to return a profit to the owner. How much the profit will be depends mainly on the process at harvest time and on how good the site is. The forest will yield posts, firewood, lumber and timbers. It will be a home for wildlife; it may serve as a windbreak; it will conserve moisture and prevent erosion; it will give the owner and his family recreation.

Trees help keep the soil from washing or blowing away. They protect the soil from excessive heat, light, and from drying winds. The foliage intercepts much of the force of wind-driven rain, preventing it from beating the protective litter and soil. Litter retards runoff and filters water into the soil without disturbing soil structure.

The roots of a tree hold the soil in place. Wherever trees grow, die, and decay they make the soil more porous and permeable. As their roots decay they leave deep channels through which water may percolate and air may move.

Trees hold water in the soil. Good forest soils which take water quickly will HOLD 50 percent or more of their total volume. This means that soil 8 feet deep may store about 4 feet of water.

When rains fall in the forest, some rain trickles down the stems and plant stalks. In a hard or prolonged rain, a considerable amount of water falls directly on the forest floor filtering into the topsoil and gradually filling its pores. Another part of the rain moves downward to become a part of the permanent water supply table that supplies

our springs and streams. After the rain stops, slow drainage through the soil continues until only as much water is left as can be held there against the pull of gravity. This percolated, or ground water, is the major source of many streams.

Trees build up soil fertility. Fertile soil contains millions of living organisms, plant and animal. It has pore space which contains water and air.

Each forest soil develops its porous and absorptive structure and its own balanced and active population of bacteria, molds, fungi, worms, insects and animals. Roots of the trees anchor the soil in place. The leaves help provide a protective cover of litter and added fertility, yearly.

Trees reduce farm heating costs. The value of windbreaks and shelterbelts on the farm have been shown by tests run in Nebraska and elsewhere, on identical houses. Where one house was protected from the winds and the other house left exposed to full sweep of the winds — while maintaining a constant house temperature of 70 degrees F. — the amount of fuel used was reduced by 22.9 percent in the sheltered house. A study of 508 farms in Dakota showed that annual saving in fuel bills, where adequate windbreaks were planted was \$15.85. The average of savings for houses protected on the north in South Dakota, Kansas and North Dakota was 20.2 percent. By sheltering three sides of a house it was found that fuel saving may run as high as 30 percent.

Trees reduce feed bills and increase calf crops. Dairymen, livestock feeders and breeders have positive ideas of how the protection afforded by windbreaks — the shorter and more blocky plantings around farmsteads — reduces their feed bill and increases their calf crops. Eighty-six livestock feeders in Nebraska and South Dakota placed this average annual saving at more than \$800. Sixty-two livestock breeders report that their savings amount to more than \$500 annually; 53 dairymen place their average savings at \$600.

At the Montana Experiment Station at Havre, Montana, two herds of cattle were wintered on the same rations — one in the protection of trees and shrubs, the other in an open lot with some protection from a shed. The tree-protected animals gained 34.9 more pounds, each, during a mild winter and lost 10.6 pounds less during a severe winter than the unprotected herd.

A windbreak on duty protects fruit gardens and fields at all seasons. Farm families depend upon gardens for much of their subsistence.

Most of them are aware of the influence of a windbreak in increasing the quality and quantity of vegetables and fruit from gardens and orchards. In the opinion of farmers interviewed the increase was \$67.15 on 323 farms in Nebraska and \$84.43 on 260 farms in South Dakota.

A profitable sale is the final step in good forest management. It decides whether the owner's investments in cash and labor have succeeded or failed. Selling, like other parts of forest management requires thought, care and experience. Unless he has had such experience, when considering a sale the owner should ask his local forester about outlets and prices for forest products. Know how much timber you have for sale! Too many farmers sell their trees to the first buyer who offers them a lump sum for stumpage. It pays to market measured timber. For example, in Kentucky an owner was offered \$7,000 for 310 trees picked by the buyer. After consulting a farm forester who helped him mark his trees for sale this owner received \$12,600 for 190 trees.

## POINTERS ON FIELD PLANTING

### Field Plantation

Landowners usually find it best to plant seedlings instead of growing directly from seed. Rodents, drought and birds are great enemies of direct seeding. Broadcasting seed, even on prepared soil, is very unreliable.

When to plant seedlings — Plant when soil conditions are good after growth stops in the fall, and before it starts in the spring. If you are in a climate where the ground frost-heaves, be sure the frost is out of the ground.

Spacing the seedlings. The more shade a tree tolerates the closer it should be planted. Close spacing, by reducing the number and size of branches, increases the value of future sawlogs. Spacing is usually from 6 by 6 to 8 by 8 feet apart. Spruce, sugar maple and hickory grow well under shade. Red, loblolly and slash pines, cottonwood and black walnut do not.

Close spacing is best on unfavorable sites, or on sites which cannot be cultivated after planting. The extra trees offset deaths and protect the soil by shading it. Species that are branchy in open stands should be planted closer than those with straight, single stems.

Generally speaking, the aim should be to have about 1,000 trees growing per acre when the plantation has become well started. A spacing

of 5 by 5 feet takes 1,742 trees per acre; 6 by 6 feet, 1,210 trees; 6 by 8, 980 trees; 8 by 8, 680 trees per acre.

Mixtures. Planting two or more kinds of trees together is a little more troublesome than setting out pure stands, but sometimes has distinct advantages. If one kind is badly damaged by insects or disease, or turns out to be unsuited to the land, the other kind may still grow into a good timber crop. Species that are mixed must be trees that grow at the same rate, otherwise the rapid growers may overtop and kill out the others.

Buying the seedlings. When you have decided what species you will plant and how many seedlings you will need, you are ready to order seedlings. These may be obtained from privately or publicly operated nurseries. In many instances seedlings are available through soil conservation districts. State nurseries sell seedlings at cost or less. County agents and local foresters usually have order blanks. Orders should be sent in 6 months in advance. Try to get seedlings raised from seed collected within 100 miles distance and 1000 feet of altitude of the proposed planting site.

#### Planting the Seedlings

When the seedlings arrive, the bundles should be loosened a little, moistened (but not washed) with water, and kept in a cool, shady, well-ventilated place. If the seedlings are to be kept more than 2 or 3 days before being planted, the bundles should be undone and the roots of the seedlings spread in a trench in the ground and immediately covered with moist soil or sand, firmly packed to remove all air spaces. The seedlings are dug up from the trench as needed.

Methods of planting seedlings. Ordinarily the ground of old fields, pastures, and cut-over areas does not need much preparation before planting. It is usually a good practice to make small scalps, 16 or 18 inches square, in heavy sod or dense weeds to remove competing plants while the small trees are getting started. Competing vegetation can also be removed — and more cheaply — by plowing furrows on the contour.

Planting can be done either in spring or fall except on heavy clay soils. On these, because of the danger of frost heaving, planting should be done only in the spring.

The planted tree should be set a little deeper than it was at the nursery. Its main roots should be nearly straight and should not be crowded,

doubled back, wound, or sharply bent. There must be no air pockets at the bottom of the hole. Moist soil should be firmed, but not packed too tightly about the roots, and the tree should be upright.

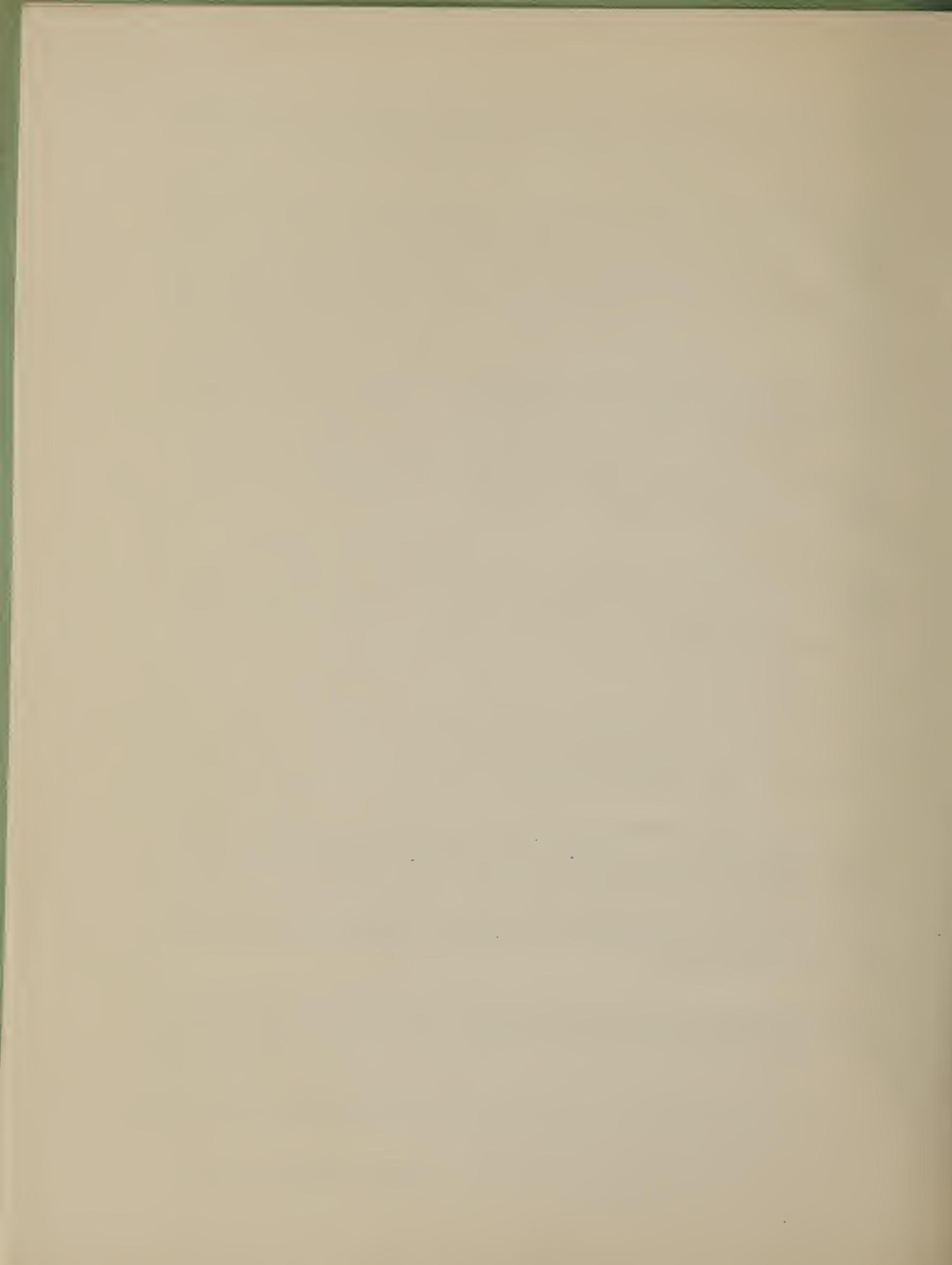
Hole planting works well on rough, rocky land and for trees with spreading root systems. Dig a hole deep enough to hold the tree roots. Leave one side vertical and place the seedling against it 1/4 to 1/2 inch deeper than it grew in the nursery. Pack some loose surface soil around the lower roots, then fill the hole level and press down the soil with your foot. Be sure that the hole is deep enough for the roots. A mattock, long-bladed grub hoe, shovel, or spade makes a good tool.

The slit method is faster than hole planting. It works best on smooth land with light to medium soils and with trees having one main root. A mattock or spade will serve, but the best tool is a grub hoe with an 8- or 10-inch blade at least as long as the roots of the trees being planted. A planting bar can be used where no scalping is needed, or where sod has been removed by plowing furrows, and is even faster.

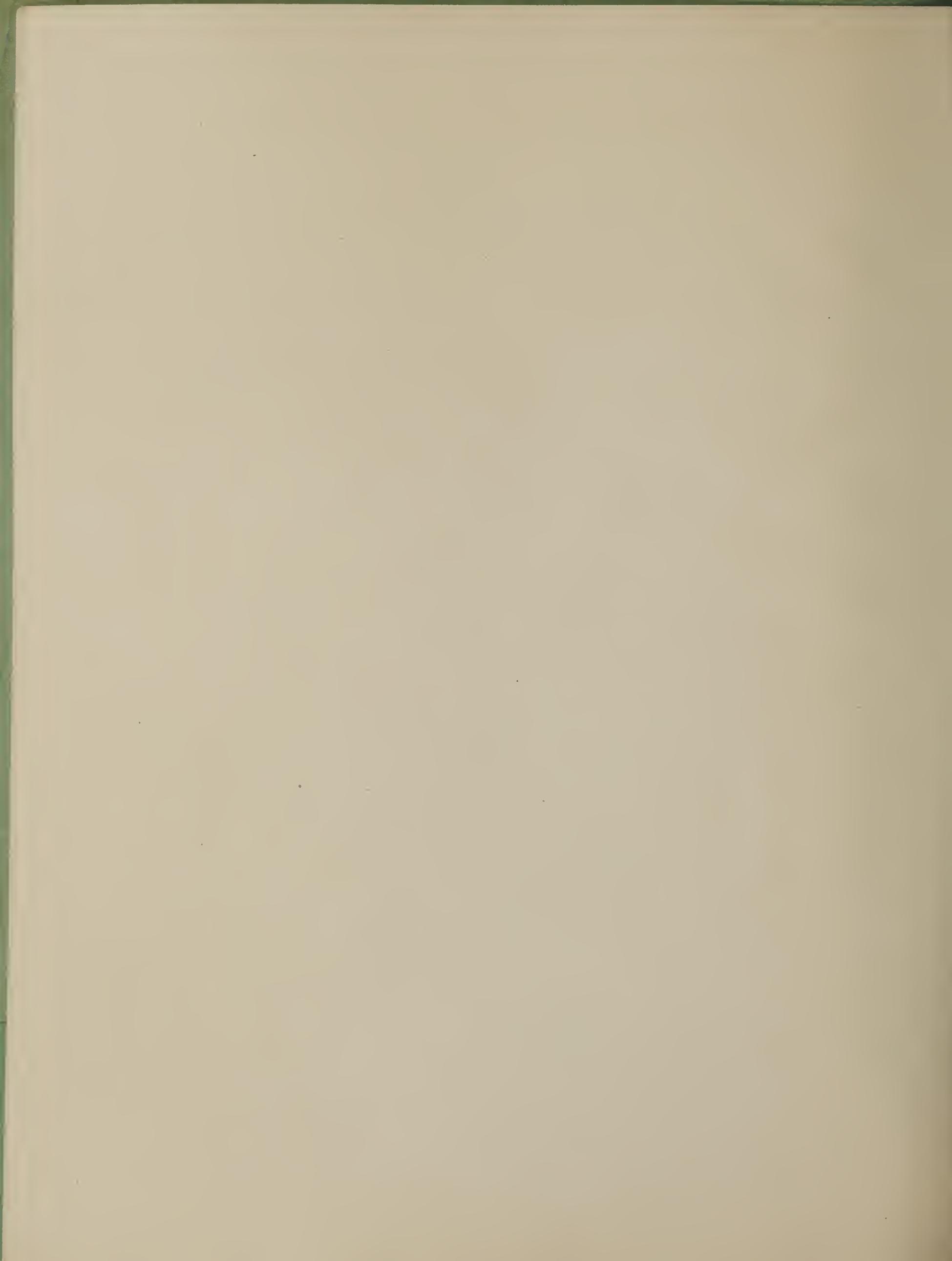
In some states foresters have developed tree-planting machines. These help speed the job and save labor. They can be used, however, only in open areas and on stone-free ground. Consult your farm forester or county agent for information as to where such machines may be borrowed or rented.

#### Questions for Discussion

1. What are some "dollars and sense" reasons for planting trees?
2. What is the most important point to remember in selecting trees for planting? How can we decide what method of planting to use? Where can trees for planting be obtained? How much do they cost?
3. Are any farmers in this area handling their timber as a crop? How do they manage it? Where do they market it, or do they use it entirely on their own farms?
4. Is there any non-productive land on the farms in this community that might be planted to trees?







# TREES CAN SERVE AND BEAUTIFY YOUR FARMSTEAD

Trees add to the looks and property value of the farmstead. Remember that a house becomes a picture when framed by appropriate trees. First consider attractiveness and ornamental effects. Make a map. After you sketch in roads, buildings, orchard, gardens, lawns and service yards and block them in to scale, prepare a separate site map to show proposed tree locations.

Plant for shade, protection, border and background. Think before you put the trees in the ground. It is a simple thing to move a tree, from one place to another, on paper, but once a tree is planted it is a chore to move it. Sketch in on your map, to scale, the location and size of the trees and shrubs you are considering when they are full grown. You will be surprised how fast trees can grow.

Look out for telephone, light or power lines when you are planning selection and arrangement of trees. It is frequently more desirable to remove trees outright than to mutilate them so they do not conflict with light or power lines.

Consult articles in farm journals or magazines. A reliable landscape architect, if there is one in your neighborhood, may help you. A reliable nurseryman may help you. Be sure that they understand that you want simplicity and informality appropriate for a farm home.

## POINTERS ON FARMSTEAD PLANTING

Yard trees grow best when they are adapted to the soil and climate of their situations. If you are a novelty seeker you may enjoy planting exotic trees and take pride in the beauty of these strangers. However, if you want a frame of loveliness in keeping with your home, concentrate on native stock.

Learn HOW the trees you are selecting grow.

Be sure to think of the size to which your trees will grow. If you are dreaming of a house set in trees 40 to 50 feet high at maturity be careful not to select one that will grow into a giant of 100 feet or more. Go see a mature tree like the one you are thinking of planting. The boll size and crown area may surprise you.

Plant your yard trees far enough away from buildings, walks and driveways to rule out costly moving later. Don't plant trees where they will eventually block the view.

Some trees grow so that they have to be braced, the American elm for example.

Some trees have brittle branches that break easily in the wind and in ice storms, the silver maples and yellow poplars for example. If you live where winter winds blow it is better to choose pin oak, blackgum, green oak, locust, redgum, or other trees that have erect habits of growth and that will stand storms.

Some trees form mats of surface roots, like maples and elms. They are greedy feeders and if you want a green and healthy lawn beneath their shade you will have to water and fertilize the ground constantly.

Some fast-growing trees are intolerant of shade. Aspen, cottonwood, and some of the poplars like to stand alone. Don't place them in groups.

Some trees will aggressively send their roots up sewer lines and clog them.

Season of planting. It is best to plant trees when they are dormant, in the fall, winter, or early spring. In Florida and in the interior and southern parts of California evergreens can be transplanted whenever soil moisture is abundant. Deciduous trees can be transplanted when they are dormant.

In the Eastern States south of a line from Boston to Buffalo, Chicago and Kansas City, and east of a line from Topeka to Corpus Christi deciduous trees can be moved from the time leaves turn in autumn until buds burst in the spring, except when temperatures are below freezing. The same rule holds for the humid coastal region in the Pacific from Northern California to British Columbia. Within these zones evergreens may be planted from late summer to late spring, provided they are moved with a ball of earth around the roots.

#### Preparation of the Planting Site

An old farm-planting maxim is to transplant any plant to soil at least as good as that in which it previously grew. In the case of trees planting stock often comes from rich, well drained, nursery soil and has to be set in inferior soil.

However, there are some things you can do to prepare for the tree. Drainage is of first importance. Sometimes there is heavy clay or hardpan at the bottom of the planting hole, fortunately underlain by sand

or gravel. If so, puncture the compacted layer with a large soil augur, post-hole digger, or similar tool and fill the holes you make with gravel beneath. For small seedling stock a 3 to 5-inch layer of gravel put in the bottom of the hole is all that is needed.

If the soil is especially tight and is not underlain by a sand or gravel layer, the use of agricultural tile is recommended. A single line of 3 or 4-inch tile laid across the bottom of the hole and barely covered by a layer of crushed rock or coarse gravel will help drainage. The bottom of the hole should slope toward the tile which should be carried to a suitable outlet.

When you dig, save the good topsoil for back filling. Mix it with sand or weathered cinders that have been sifted to remove large chunks. One-third mixture of equal parts of peatmoss and subsoil is recommended.

Well-rotted manure, finely chopped sod, leafmold or weed compost may be substituted for peatmoss. Turn over the mixtures three or four times with a shovel, taking out stones, root fragments and other trash.

If you are planting on a beach or in a spot where grading or erosion has exposed a gravelly cemented soil, dig out the entire bed area — making an enlarged hole — and fill with friable, fertile new soil.

Subdue the urge to use mineral fertilizers when preparing a site for planting. Just see that the soil is well drained, has abundant moisture, and is loose enough to permit good aeration.

#### Lifting Deciduous Trees

Until they are 15 to 20 feet high, trees that shed their leaves each autumn and remain leafless over winter — deciduous trees — can be moved with bare roots.

The first step in digging up a tree for transplanting is to make a circular trench around the outside spread of roots of the tree. A tree with a 1-inch trunk diameter (measured a foot above the ground) should have a trench with at least a 10-inch radius. The trench radius should be increased about 10 inches for each inch of increase in trunk diameter. Depth of trench should be at least 18 inches, except in situations where the roots are especially shallow. Cut small roots with a spade and larger ones with an axe.

The second step is to remove the soil from the roots by carefully working inward from the edge of the trench, using a narrow tined

spading fork to comb the roots. Continue combing until most of the roots are exposed. For large trees that require more time to dig, cover exposed roots with wet burlap.

Third, tip the tree carefully to loosen it further after all lateral roots are uncovered. Avoid strain on any roots that escaped cutting. If a strong taproot is encountered, dig deeper to obtain at least 20 to 30 inches of taproot, depending on the size of the tree.

Fourth, cover all roots temporarily with damp burlap, moist soil, leaves or other materials to keep them from drying after the tree has been lifted.

Move trees on calm cloudy days to reduce root drying.

Trees should be planted as soon as possible after lifting. Where delay is unavoidable, set them in easily worked, well-drained soil.

### Transplanting Evergreen Trees

All evergreens are best removed with a ball of soil that keeps a central core of sensitive roots intact and reduces the transplanting shock.

To dig balled stock first mark a circle on the ground around the tree, making the radius of the circle somewhat larger than the width of the ball.

Second, dig a vertical trench just outside the marked circle, going down below the zone of abundant fibrous roots. The depth of the ball varies with the size of the tree.

### Recommended depths to dig for Different Ball Sizes

| Diameter of Ball<br>Inches | Depth of Ball<br>Inches |
|----------------------------|-------------------------|
| 10                         | 8                       |
| 20                         | 15                      |
| 30                         | 20                      |
| 48                         | 30                      |

Third, cut any lateral roots flush with the side face of the trench. To avoid jarring the soil loose, use pruning shears or a saw instead of an axe for the larger roots.

Fourth, pare off all the surplus soil with the back of the spade toward the ball. Trim the sides to slope inward so that the diameter at the

bottom of the ball is a few inches less than that at the top, and the surface of the ball is smooth.

Fifth, if the ball is not more than 18 inches in diameter and the soil is compact, adhering firmly, simply undercut the ball and tip it over on a square of burlap. Lift the ball from the hole, draw the burlap tight and pin it in place with nails. If the soil is loose, or the ball diameter exceeds 18 inches, reinforce the pinning with heavy cord, wire netting, or light rope drawn around the ball. Complete this in the hole before lifting. Balls hold together better if you move trees immediately following rains.

Balls too heavy to lift by manpower, require platforms and rollers. Moving large trees is a job for experts — better get an arborist equipped to undertake such jobs, which are difficult and cost accordingly.

### Planting

Complete all soil preparation and dig all holes before the trees are in. Reduce by all possible means the length of time the trees are out of the ground.

The steps in planting bare-rooted stock and balled stock are somewhat different.

For bare-rooted stock first, be sure the hole has a flat bottom and is wide and deep enough to take the roots freely without cramping. Second, shovel 4 inches of topsoil or prepared soil into the bottom. Heap up a mound at the center of the hole where the base of the trunk will rest. The mound should be large enough to prevent formation of air pockets as the soil packs and recedes. Inspect the roots and prune off any ragged ends. Insert the tree and fill in the earth to hold the tree at about the depth it had in its former location. Spread out the roots to approximately their original position and shovel in backfill of topsoil or prepared soil to hold them in place. Trample the soil carefully around the trunk and roots to prevent excessive settling of soil away from the roots. Take care not to scuff any bark from roots or base of trunk. When the hole is nearly filled, pour in several gallons of water. After free water has disappeared fill in the hole so that it is level with adjoining ground. Add more filling later if the soil continues to settle. To reduce runoff during watering build up a small ridge around the hole.

For trees planted with a ball of soil, see that the hole is at least a foot wider than the ball diameter and at least 5 inches deeper than the

ball. Heap up a low mound in the center of the hole. Measure the depth of the ball as accurately as possible, then adjust mound height to leave the tree at the same level it held in its former location. Lower the tree into the hole, then shovel in enough soil at the base of the ball to hold it in place. Remove the burlap and shovel in top-soil or prepared soil until the hole is about half full. Tramp down to reduce air pockets. Fill the hole with water and when this has soaked away, fill with soil up to ground level. Build up a 3 to 4 inch ridge around the outer edge of the ball to reduce runoff from watering. If the ball is compact, of heavy texture and much drier than adjoining backfill, examine the ball to see whether it is absorbing water. The tendency is for water to percolate downward and outward into the looser, lighter textured soil, leaving the ball dry. If this is happening, take special precautions to see that the ball is wet enough at the start.

### Pruning

Enough leaf-bearing surface of newly transplanted deciduous trees should be thinned out by pruning to balance the loss of roots. Prune only lateral branches, removing from one-half to two-thirds of them. The main leader, and any short branches growing out directly from the leader or the main trunk should be left undisturbed. Most evergreen trees require little if any pruning, except to remove broken or injured branches.

Wounds from pruning, if more than a square inch in area, should be dressed with asphalt-base tree paint, or shellac, to hasten healing and prevent the possibility of decay.

### After-Care

If a tree is more than 7 feet tall, in a situation exposed to winds, it needs support. A single stake long enough to reach into the lower part of the crown, driven down to solid soil about a foot from the base of the trunk, will do for trees up to 2 inches in trunk diameter. The tree is fastened to the stake with wire, run through a small piece of old garden hose to keep it from cutting into the bark. Burlap and sash cord or light rope will do.

Trees that are 2 to 4 inches in diameter require two or three such stakes. Trees larger than 4 inches should be guyed down with three or more guys. Use wire or cable, run through old garden hose and fasten the lower ends to stakes.

It is advisable to lay down a three inch layer of peat moss, leaves, straw, hay, shredded corn stalks, bagasse, wood shaving or similar

material, as mulch. This will reduce evaporation, prevent early freezing and keep down weeds. On deciduous trees a mulch is not necessary after the first two years, but a continuous mulch is desirable on evergreens.

To the newly planted tree proper watering is the most important of all measures. Waterlogging should be avoided; excess water will kill some species faster than drought.

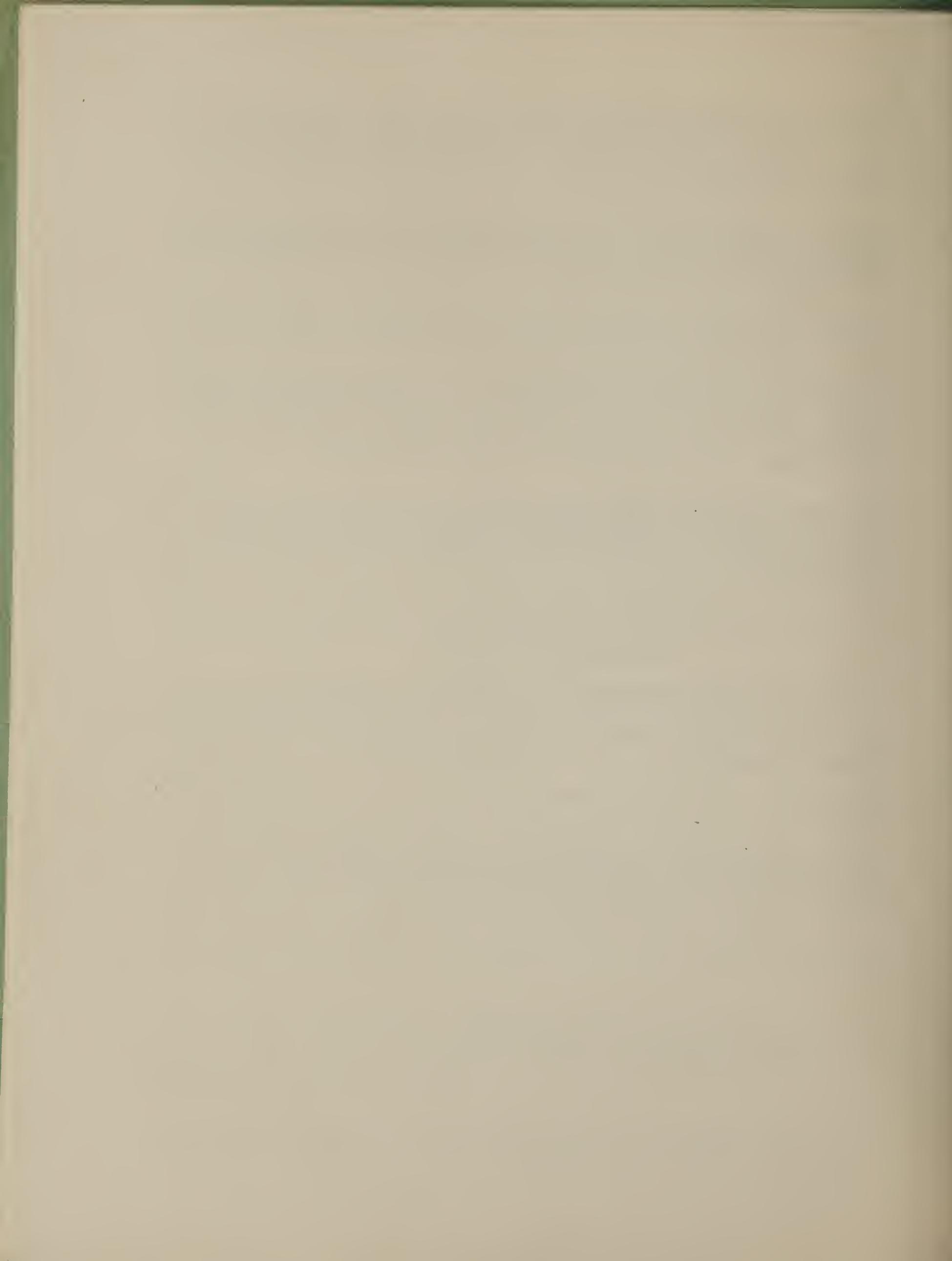
To prevent sunscald, wrap the trunk and lower limbs with strips of burlap or horticultural crepe paper.

No fertilizing is advised at planting time, but when the tree is established, 6 months to a year after planting, moderate fertilizing is recommended. Advice on this matter can be obtained from the county agent, State experiment station, or a local nurseryman.

For landowners who wonder what kind of trees to plant, foresters have one simple rule: plant the kinds that have already done well in your locality.

#### Questions for Discussion

1. Why is transplanting trees more difficult than planting seedlings?
2. What are the chief points to consider in selecting trees for ornamental planting?
3. Can farm woodlands and landscape plantings ever overlap in purpose?
4. Which farms in this area are most attractively landscaped? Is their sale value increased by their appearance?



# TREES CAN WORK FOR THE BEAUTY AND SECURITY OF YOUR NEIGHBORHOOD, STATE AND NATION

## Problem Land

There are few counties in the United States without land that presents an administrative problem. Some cut-over land, submarginal farms, spoil-banks remaining after mining operations, swamps, eroding mountain slopes, deep gorges, gullies, and sand dunes are often the lands that private owners cannot afford to hold — problem land that nobody wants. Under proper tree planting they can become an asset instead of a liability. Where they occur in very large areas they may be incorporated into national or State forests, but small and scattered tracts are developed best into county or township forests under the administration of the local government.

## Trees Improve Rural Communities and Make Them Better Places in Which to Live

The social benefits of community tree planting are pleasure, health and improved standards of living. Let the children grow up with the trees! Up-to-date residents of a community who want to make their neighborhood a good place to live in, may plant a school forest or a public forest.

Children who have a school forest understand the relation of forests to our life. When the school's program of education is tied in with the forest, education benefits greatly. The music teacher who gathers her class at the foot of tall pines to let the children discover for themselves that there is music in the rustle of the treetops is teaching a lesson in music appreciation that is not soon forgotten. By trying to catch the mood and meter of the "song of the pines" they learned the elements of true music. Teachers of mathematics and manual arts who lead their pupils to survey a location for a shelter house on their school forest; to design a building and draw up specifications and bills of material for its construction are teaching practical lessons. The girls in domestic science classes who work out practical menus that they can serve in the field to boys who are planting trees in the school forests have a lesson in the art of homemaking. Such projects give point to a slogan for school forests "Youth develops where youth builds." Approximately 1,300 schools have their own forests. Many more have the privilege of using municipal, county or private forests for educational purposes.

Public forests deserve a place in modern community planning. There are more than 3,000 community forests in the United States, covering

4,413,950 acres. Of the 1,121 municipal forests of record about one-fourth are for watershed protection. County and township forests together number 617. County and township forests vary in pattern and purpose. Some of them are mostly for recreation; others emphasize growing of timber.

#### Trees Attract Visitors and Give Them Roadside Comfort

The natural and pastoral scenes of the United States are valuable financial assets. Roadsides are the front yards of the nation. Roadside development is valuable to motorists, to abutting property owners, to the community at large, and to future generations.

Any locality which can offer fine scenery can bring in visitors who spend money in the community. Locally, the development of roadsides is a logical and forward step in public improvement. If shrubs, annuals and herbaceous perennials are planted, they appeal to the traveler's sense of beauty, but from a practical standpoint they may be considered secondary to trees.

Because the costs involved in a State-wide program of roadside improvement are gigantic, a part of the burden is being borne by communities and counties. Funds are being assigned to roadway improvements by county boards of roads and revenues. Trees, labor, and seeds may be contributed by local groups.

When carried out by clubs, groups, or individuals, tree planting in connection with roads should be directed by highway authorities as trees planted in the wrong places can obstruct sight-distance, trap snow onto the road, create icy spots due to shade, and otherwise set up real safety menaces.

By working together, rapid strides can be made; soil and water losses reduced, and highways made safer and more attractive.

When shaded safety and turn-out areas and wayside tables are maintained, visitors are attracted. The roadside beauty and comfort provided often inspires them to duplicate the plantings and facilities in their home neighborhoods.

When your club undertakes a planting project, for roadside beautification, be sure you understand where responsibility for maintenance lies, after planting. The cost of actual work in the field may be defrayed by you, the sponsors, but unless a sufficient amount of money is set aside each year thereafter for maintenance, the original expenditure may be largely wasted. Few groups are in a position to

guarantee the necessary annual funds for an indefinite period. As a result the improvement may be neglected, fall into the discard and be forgotten.

Other things can happen too if your plan doesn't conform to the highway plan for future development of the road. If it is decided to widen the road, change its alignment, or make extensive improvements, will it affect your project?

Or, perhaps farm neighbors may object to roadside planting because they believe that shade damages the crops. Careful estimates of such situations where mature trees were concerned, indicate that losses are greater on the north side of east-west roads, and losses are negligible on the south side of the same roads. There is little loss on either side of roads running north and south. A wayside planting expert estimates average crop loss because of shade at less than three-tenths of one percent.

The farmers of earlier days loved trees for their appearance and for the shade they offered. That is why America's countryside is lined with mature elm, oaks, and maples.

Use good planting stock, if you plant — do not allow your program to be cheapened or restricted by limited funds beyond the point of good planting practice. Following a consistent and uninterrupted program of tree planting, year after year, is the surest method of providing this needed public improvement which requires generations to complete and which serves for centuries. "Big" or "expensive" trees are not necessarily trees good for planting. It is frequently better to plant hundreds of small trees for a given sum than one or two big ornamental specimens for the same price.

Country roadsides, properly planted with trees, do not often need further landscape treatment.

#### Questions for Discussion

1. What is the most popular Sunday afternoon drive in this community? Why?
2. Are any of the roadside embankments in the community eroding? Unsightly? Would planting of trees and shrubs add to their attractiveness? How can we go about the job of getting them planted?

3. Is there a public forest of any kind in this community? Is there any publicly owned, vacant land that might be used for such a forest? Would its chief purpose be to produce trees or provide recreation?

4. Is there a school forest in the community? Might such a forest enrich the school program? Are our state and county conservation agencies and our industries interested in helping start such a forest?

# YOUR CLUB CAN BE A VITAL FORCE IN TREE PLANTING

## Why Sponsor Planting Programs?

Get behind the men and organizations that are trying to make productive the 60 million acres of privately owned land best suited to the growing of trees. Through your club, plan and carry through a city-wide, county-wide, or state-wide campaign.

Just remember that everywhere we'll need wood — much more wood — for years to come. So we need many more trees, and someone has to keep them growing. And while these trees are growing we must protect and conserve related forest values, especially WATER. We need more productive grasslands, too. Each State is responsible for the protection and restoration of wildlife, but it depends on farmers, timber owners, and other landowners for a place to produce and support fish and game. We must carry out aggressive control of insects and disease epidemics which damage tree crops. In some localities it will be a good idea to acquire land to strengthen national or State forest management or to prevent damage to public values. We must encourage and assist and, where necessary, require forest landowners to stop needless destructive cutting.

A tree planting program is a definite way of cooperating with FAO, the Food and Agriculture Organization of the United Nations. This organization, as you know, has for its purpose the elimination of war by eliminating the hunger and poverty in which war is bred.

In our own nation — East, West, North, and South — and elsewhere in the thinking world, people can no longer postpone action to use properly and to build up our full forest wealth. Idle acres earn no money, provide no jobs. They grow no raw materials for food, clothing, or shelter. These are the things people need before they can think about and work for peace and freedom and good government.

Tree planting programs, public and private, offer a means of improving local, national, and even world welfare. Forests now produce thousands of materials and products essential to human well-being, and research indicates that we have only begun to discover what they can provide in the way of food and fiber.

In putting idle lands to work, every farmer and farm group can make a real contribution to the cause of human freedom in a peaceful world. Begin now to take care of the wooded acres you own and to plant trees on land best suited to grow them.

(over)

Remember, we need trees. And you, who work the good earth, can provide them.

Questions for Discussion

1. How can a farmer make money from trees? What products can he sell? What products can he use on his farm? How long does it take to grow a Christmas tree crop?
2. How much wood is needed on the average farm for posts, fuelwood, and materials for building and repair?
3. Are there any tree plantations, windbreaks, or shelterbelts in this community?
4. How many woodlands in this community are used for pasture? What shape are they in? How much new tree growth is coming in?
5. Do the responsibilities of land ownership involve conserving the land for continued production? Why?

A Suggested Club Program

1. Consult the nearest forester and learn about local conditions, needs and problems.
2. Assemble practical information as to successful trees for the different types of local planting.
3. Encourage and assist individuals in farmstead and farm tree planting.
4. In cooperation with the proper authorities, plan a long-time tree planting program (school, community, or roadside) and work out the steps to be undertaken year by year.
5. Keep a yearly record of the trees planted and send a report to the Forest Service, U. S. Department of Agriculture, Washington 25, D. C. You can use the handy form included with this packet.
6. Cooperate with individuals and organizations engaged in similar conservation work.

## PLANT YOUR TREES WITH PLENTY OF HELP

The Federal Government and the States cooperate in producing and distributing trees for planting on private lands.

Privately financed groups such as business-men's organizations, forest industries, banks and railroads also help people to do reforestation work in some states.

Helps available to you vary so widely that a single statement cannot be made to cover all places. Instead, local inquiry should be made when the project planning is started.

You may be able to get such helps as these:

Instructive Bulletins

On the ground site examination and technical advice

Trees at nominal price or free

Use of planting machines

Organized labor crews working at small cost or free

Cash payments for agricultural conservation work performed

Materials for fencing

Wildfire protection

In some states several of these helps exist; in others only a few may be available.

To get the help you need contact the official nearest you, (see page 3). He will direct you to sources of assistance in your community. He may refer you to the Extension Forester at the State Agricultural College, or to your local county agricultural agent at the county seat. In some places he might also direct you to Tennessee Valley Authority or to Soil Conservation Service.

There is such a demand for trees these days that most tree nurseries are hard put to meet that demand — a good reason to place your order early. Your State Forester or Extension Forester will be able to advise on this point. He can tell you of other nearby sources if his trees are already arranged for.

### Questions for Discussion

1. Why is Congress interested in promoting good management of farm woodlands? In encouraging planting of denuded timber land?
2. Why are private industries such as paper companies interested in providing stock for tree planting on farms?
3. What privately financed organizations as well as government ones in our state and community are working to promote tree planting on idle land?
4. Who can advise where tree seedlings may be obtained? And their cost? What must a land owner do to obtain them?
5. What products and values does our country get from trees? How would our daily life and our industrial production be affected if we lacked wood and paper? How much land in the United States is capable of growing trees of commercial value but not capable of producing field crops or permanent pasture?
6. Generally, what kind of land should a farmer put in trees?
7. How about ending this series of lessons with some special program — a display, a picture collection, a field trip? The display might concern tree poems, songs, or stories, tree pictures, leaf or seed collections from local trees, or scrap books on the lessons. The field trip might be made to a striking local tree, a tree plantation, a well managed farm woodlot, or to an area needing improvement.
8. In the light of what we have learned in these discussions, what is the practical significance of these lines by Henry Van Dyke?

"He who planteth a tree is a servant of God:  
He provideth a kindness for many generations,  
And faces he hath never seen shall call him blessed."

State Agencies Cooperating in Distribution of Planting Stock

| <u>State</u> | <u>Address</u>   |
|--------------|--|
| Alabama      | J. M. Stauffer, State Forester<br>Division of Forestry<br>5 N. Bainbridge Street<br>Montgomery 4, Alabama      |
| Arizona      | Harvey Tate, Ext. Horticulturist<br>College of Agr., University of Arizona<br>Tucson, Arizona                  |
| Arkansas     | Fred H. Lang, Director<br>Division of Forestry and Parks<br>P. O. Box 1940<br>Little Rock, Arkansas            |
| California   | DeWitt Nelson, State Forester<br>Division of Forestry<br>State Office Bldg. No. 1<br>Sacramento 14, California |
| Colorado     | R. E. Ford, Agent<br>Colorado A. & M. College<br>Fort Collins, Colorado  |
| Connecticut  | W. F. Schreeder, State Forester<br>165 Capitol Avenue<br>Hartford 15, Connecticut                              |
| Delaware     | W. S. Taber, State Forester<br>State House<br>Dover, Delaware  |
| Florida      | C. H. Coulter, State Forester<br>P. O. Box 1200<br>Tallahassee, Florida  |

| <u>State</u> | <u>Address</u>   |
|--------------|--|
| Georgia      | Guyton DeLoach, Director<br>Georgia Forestry Commission<br>State Capitol<br>Atlanta 3, Georgia                     |
| Idaho        | Dwight S. Jeffers<br>Dean, School of Forestry<br>University of Idaho<br>Moscow, Idaho                              |
| Illinois     | E. E. Nuutila, State Forester<br>Division of Forestry<br>301 1/2 E. Monroe Street<br>Springfield, Illinois         |
| Indiana      | Ralph F. Wilcox, State Forester<br>Division of Forestry<br>311-325 W. Washington Street<br>Indianapolis 9, Indiana |
| Iowa         | M. A. Ellerhoff, Supt. of Forests<br>Division of Lands & Waters<br>East 7th & Court Streets<br>Des Moines 9, Iowa  |
| Kansas       | Extension Forester<br>Kansas State College<br>Manhattan, Kansas  |
| Kentucky     | H. B. Newland, Director<br>Division of Forestry<br>Frankfort, Kentucky   |
| Louisiana    | James E. Mixon, State Forester<br>P. O. Box 1269<br>Baton Rouge 1, Louisiana                                       |
| Maine        | A. D. Nutting, State Forester<br>Maine Forest Service<br>Augusta, Maine  |
| Maryland     | Joseph F. Kaylor, Director<br>Dept. of State Forests and Parks<br>State Office Bldg.<br>Annapolis, Maryland        |

| <u>State</u>  | <u>Address</u>   |
|---------------|--|
| Massachusetts | Raymond J. Kenney, Director<br>Division of Forestry<br>15 Ashburton Place<br>Boston 8, Massachusetts                     |
| Michigan      | Dr. P. A. Herbert, Director<br>Division of Conservation<br>Michigan State College<br>East Lansing, Michigan              |
| Minnesota     | Clarence Prout, Director<br>Division of Forestry<br>State Office Bldg.<br>St. Paul 1, Minnesota                          |
| Mississippi   | James W. Craig, State Forester<br>Mississippi Forest & Park Service<br>1106 State Office Bldg.<br>Jackson 5, Mississippi |
| Missouri      | George O. White, State Forester<br>Jefferson City, Missouri  |
| Montana       | Ross Williams<br>Dean, School of Forestry<br>Montana State University<br>Missoula, Montana                               |
| Nebraska      | Earl G. Maxwell, Ext. Forester<br>College of Agriculture<br>University of Nebraska<br>Lincoln 1, Nebraska                |
| Nevada        | Don M. Drummond, Ext. Forester<br>State Capitol<br>Carson City, Nevada   |
| New Hampshire | William H. Messeck, Jr., State Forester<br>State Office Bldg.<br>Capitol Street<br>Concord, New Hampshire                |
| New Jersey    | C. P. Wilber, State Forester<br>State House Annex<br>Trenton 7, New Jersey   |

| <u>State</u>   | <u>Address</u>  |
|----------------|---|
| New Mexico     | L. C. Bibbs, Extension Forester<br>College of Agriculture<br>State College, New Mexico                          |
| New York       | A. S. Hopkins, Director<br>Division of Lands and Forests<br>Albany 7, New York                                  |
| North Carolina | Fred H. Claridge, State Forester<br>Division of Forestry<br>P. O. Box 2719<br>Raleigh, North Carolina           |
| North Dakota   | C. N. Nelson, State Forester<br>Bottineau, North Dakota   |
| Ohio           | O. A. Alderman, Chief<br>Division of Forestry<br>1500 Dublin Road<br>Columbus, Ohio                             |
| Oklahoma       | Donald E. Stauffer, Director<br>Division of Forestry<br>536 State Capitol<br>Oklahoma City 5, Oklahoma          |
| Oregon         | Dwight L. Phipps, Acting State Forester<br>Salem, Oregon  |
| Pennsylvania   | O. Ben Gipple, Chief<br>Bureau of Forests<br>Harrisburg, Pennsylvania   |
| Rhode Island   | Eric G. Jacobson, Chief Forester<br>Office of Forests and Parks<br>18 State House<br>Providence 2, Rhode Island |
| South Carolina | C. H. Flory, State Forester<br>506 Calhoun Office Bldg.<br>Columbia 1, South Carolina                           |
| South Dakota   | Harry R. Woodward, State Forester<br>Pierre, South Dakota   |

| <u>State</u>  | <u>Address</u>   |
|---------------|--|
| Tennessee     | C. I. Peterson, State Forester<br>Division of Forestry<br>309 New State Office Bldg.<br>Nashville 3, Tennessee |
| Texas         | A. D. Folweiler, Director<br>Texas Forest Service<br>Agr. & Mechanical College<br>College Station 5, Texas     |
| Utah          | Dr. T. W. Daniel<br>Professor of Forestry<br>Utah State Agricultural College<br>Logan, Utah                    |
| Vermont       | Perry H. Merrill, State Forester<br>Montpelier, Vermont  |
| Virginia      | George W. Dean, State Forester<br>University Station<br>Charlottesville, Virginia                              |
| Washington    | E. H. Steffen, Head<br>Dept. of Forestry & Range Mgt.<br>State College of Washington<br>Pullman, Washington    |
| West Virginia | Carl J. Johnson, State Forester<br>Charleston 5, West Virginia   |
| Wisconsin     | Ernest F. Swift<br>Director of Conservation<br>Madison 2, Wisconsin  |
| Wyoming       | George H. Bridgmon, Asst. Director<br>Wyoming Agr. Experiment Station<br>Laramie, Wyoming                      |



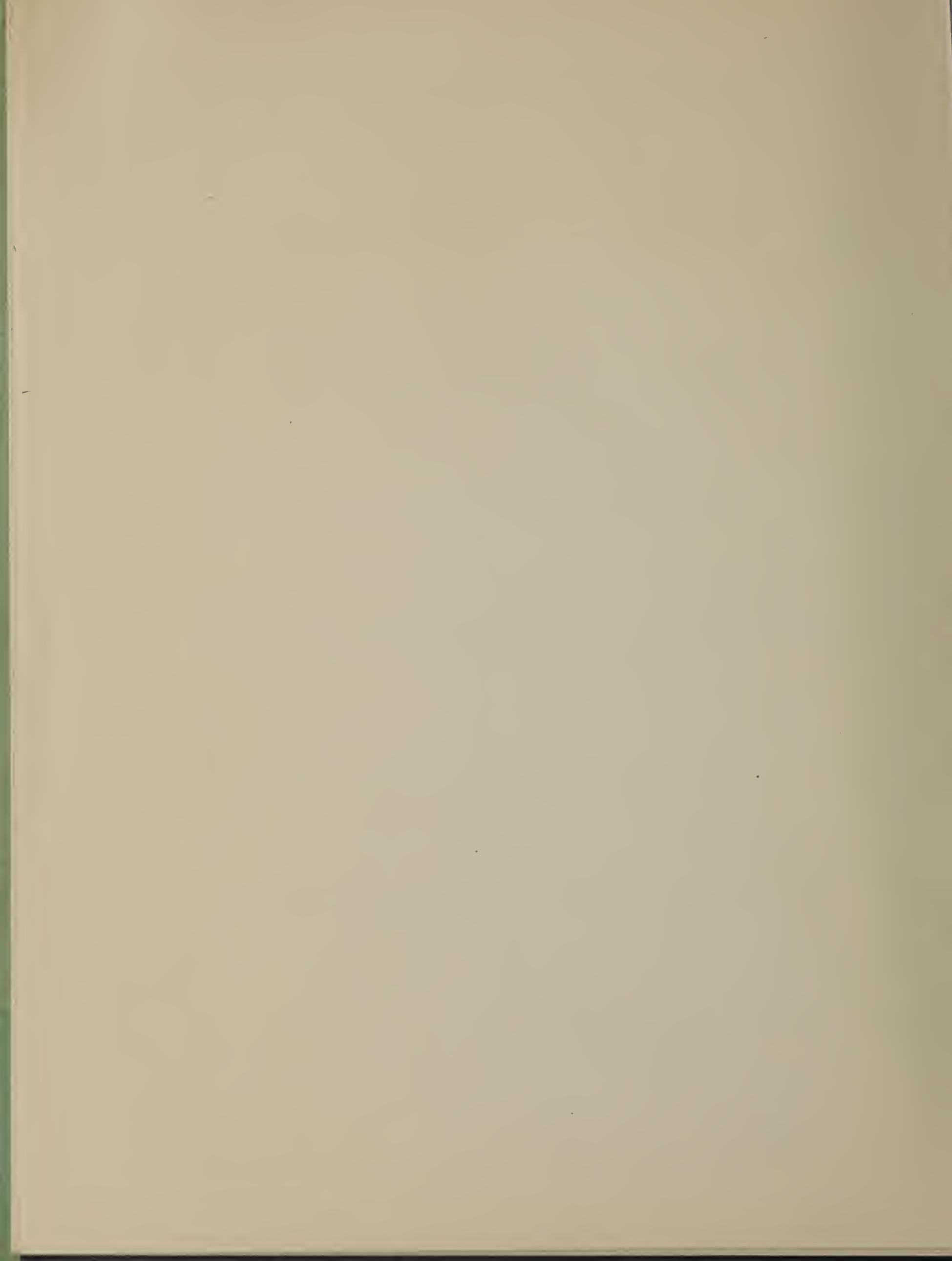
TREE PLANTING RECORD, COUNTRY WOMEN'S COUNCIL, USA  
 "YOU NEED TREES" PROGRAM

| Date | Farm Acres      |                     |                | Homestead Planting |                |                 | Roadside Planting |                                       |                |
|------|-----------------|---------------------|----------------|--------------------|----------------|-----------------|-------------------|---------------------------------------|----------------|
|      | Acreage Planted | Number of Seedlings | Kinds of Trees | Kinds of Trees     | Where Obtained | Number of Trees | Number of Trees   | Cooperating Agencies or Organizations | Kinds of Trees |
|      |                 |                     |                |                    |                |                 |                   |                                       |                |

Signature \_\_\_\_\_

Address \_\_\_\_\_

Total number of trees planted 1952 \_\_\_\_\_



## 6 LESSONS IN TREE PLANTING

---

1. For tomorrow's sake, plant trees today
2. Trees can make idle lands come to life
3. Trees can serve and beautify your farmstead
4. Trees can work for the beauty and security of your neighborhood, state and nation
5. Your club can be a vital force in tree planting
6. Plant your trees with plenty of help

